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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/591,797	09/06/2006	Masahide Miura	129334	4665
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EXAMINER				
ZIMMER, ANTHONY J				
ART UNIT		PAPER NUMBER		
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/591,797

Applicant(s)

MIURA ET AL.

Examiner

ANTHONY J. ZIMMER

Art Unit

1793

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 September 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) 1-6 and 8-13 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/CI/100)
Paper No(s)/Mail Date 6/9/2008, 11/8/2006, 9/6/2006
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

Applicant's election with traverse of Group III, claim 7 in the reply filed on 9/22/2008 is acknowledged. The traversal is on the ground(s) that lack of unity has not been established because the reference relied on does not meet the limitations of the product of claim 1. This is not found persuasive because Punta teaches zirconia with a ceria film thereon. See Section 3.2 of Punta. Thus, the molar percentage of zirconia (the first metal oxide) in the core is higher than the molar fraction of zirconia in the surface layer which is composed of ceria and the molar fraction of ceria (the second metal oxide) in the surface layer is higher than the molar fraction of ceria in the core which is composed of zirconia. Thus, the claims, as worded, lack unity under PCT Rule 13.2 for lacking a common special technical feature.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 7 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 7 recites the limitations "the isoelectric point," "the particle diameter," and "the pH" in lines 4-6, 8-10, and 12-14 of the claim. There are insufficient antecedent bases for these limitations in the claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kuno '440.

Kuno teaches a process of preparing metal oxide particles by mixing ceria (second metal oxide) and zirconia (first metal oxide) sols to form a solution, adjusting the pH of the solution to be closer to the isoelectric point of zirconia, and then aggregating the ceria particles around the zirconia. See [0030] and [0044]. Kuno teaches drying and firing. See [0039]-[0040]. Though Kuno is not particular about the

method of aggregating the ceria particles around the zirconia particles, Kuno teaches that metal oxide sol particles can be aggregated by adjusting the pH to near the isoelectric point thereof. See [0044]. Thus it would have been obvious to one of ordinary skill in the art to employ this known method when aggregating the ceria particles in order to affect the predictable result of forming a layered ceria/zirconia metal oxide particle.

Kuno also is silent in regard to the colloid particle size of each metal oxide, and only suggests that metal oxides are used with the same particle size. See [0041]. However, the instant claims require only that the colloidal particles of the second metal oxide are smaller than those of the first metal oxide. Such language does not patentably distinguish the instant claims from Kuno because such a recitation encompasses diameters, the differences of which are infinitesimally small and thus are close enough to the prior art. See MPEP 2144.05. Also, selection of a suitable particle size is a matter of design choice and routine optimization, depending on the desired morphology of the product, that has not been shown to produce an unexpected result. Thus, such a limitation does not present a patentable distinction.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140

F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claim 7 is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 7 of copending Application No. 10/589421. Although the conflicting claims are not identical, they are not patentably distinct from each other because of the following:

Claim 7 of 10/589421 is silent in regard to the colloid particle size of each metal oxide. It would have been obvious to one of ordinary skill in the art to use similar colloidal particle sizes for the first and second metal oxides as is common practice. The instant claims only require that the colloidal particles of the second metal oxide are smaller than those of the first metal oxide. Such language does not patentably distinguish the instant claims from that of 10/589421 because such a recitation encompasses diameters, the differences of which are infinitesimally small and thus are not distinguished from the prior art. See MPEP 2144.05. Also, selection of a suitable particle size is a matter of design choice and routine optimization, depending on the desired morphology of the product, that has not been shown to produce an unexpected result. Thus, the claims are not patentably distinct.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim 7 is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 9 of copending Application No. 10/589669. Although the conflicting claims are not identical, they are not patentably distinct from each other because of the following:

Claim 9 of 10/589669 is silent in regard to the colloid particle size of each metal oxide. It would have been obvious to one of ordinary skill in the art to use similar colloidal particle sizes for the first and second metal oxides as is common practice. The instant claims only require that the colloidal particles of the second metal oxide are smaller than those of the first metal oxide. Such language does not patentably distinguish the instant claims from that of 10/589669 because such a recitation encompasses diameters, the differences of which are infinitesimally small and thus are not distinguished from the prior art. See MPEP 2144.05. Also, selection of a suitable particle size is a matter of design choice and routine optimization, depending on the desired morphology of the product, that has not been shown to produce an unexpected result. Thus, the claims are not patentably distinct.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim 7 is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-5 of copending Application No. 10/593629. Although the conflicting claims are not identical, they are not patentably distinct from each other because of the following:

Claims 1-5 of 10/593629 are silent in regard to the colloid particle size of each metal oxide. It would have been obvious to one of ordinary skill in the art to use similar colloidal particle sizes for the first and second metal oxides as is common practice. The instant claims only require that the colloidal particles of the second metal oxide are smaller than those of the first metal oxide. Such language does not patentably distinguish the instant claims from those of 10/593629 because such a recitation encompasses diameters, the differences of which are infinitesimally small and thus are not distinguished from the prior art. See MPEP 2144.05. Also, selection of a suitable particle size is a matter of design choice and routine optimization, depending on the desired morphology of the product, that has not been shown to produce an unexpected result. Thus, the claims are not patentably distinct.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Dransfield '192, Kuno '888, Plaza et al., and Aiken all teach colloidal methods of making metal oxide particles/composites.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANTHONY J. ZIMMER whose telephone number is (571)270-3591. The examiner can normally be reached on Monday - Friday 7:30 AM - 5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on 571-272-1358. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ajz

/Steven Bos/
Primary Examiner, Art Unit 1793